# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| Applicant's or agent's file reference | **FOR FURTHER ACTION** | see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. |
|---|---|---|
| PF-0712 PCT | | |
| International application No. | International filing date *(day/month/year)* | (Earliest) Priority Date *(day/month/year)* |
| PCT/US 00/16644 | 15/06/2000 | 17/06/1999 |
| Applicant | | |
| INCYTE GENOMICS, INC. et al. | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 12 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language,** the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

   b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

   ☒ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☒ furnished subsequently to this Authority in computer readble form.

   ☒ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☒ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title,**

   ☐ the text is approved as submitted by the applicant.

   ☒ the text has been established by this Authority to read as follows:

   HUMAN RNA METABOLISM PROTEINS (RMEP)

5. With regard to the **abstract,**

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. --

   ☐ as suggested by the applicant.

   ☐ because the applicant failed to suggest a figure.

   ☐ because this figure better characterizes the invention.

   ☐ None of the figures.

# INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 00/16644

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N15/12 C12N5/10 C07K14/47 C12N15/00 A01K67/027
C12Q1/68 C07K16/18 A61K38/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
STRAND, EPO-Internal, WPI Data, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| A ✓ | WILSON R ET AL: "2.2 MB OF CONTIGUOUS NUCLEOTIDE SEQUENCE FROM CHROMOSOME III OF C. ELEGANS" NATURE,GB,MACMILLAN JOURNALS LTD. LONDON, vol. 368, no. 6466, 3 March 1994 (1994-03-03), pages 32-38, XP002029739 ISSN: 0028-0836 the whole document --- | 1 |
| A ✓ | WO 98 23744 A (INCYTE PHARMA INC ;BANDMAN OLGA (US); GOLI SURYA K (US)) 4 June 1998 (1998-06-04) the whole document --- | 1 |
| | -/-- | |

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 17 January 2001 | 25. 04. 2001 |

| Name and mailing address of the ISA | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 | CHAMBONNET, F |

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Form PCT/ISA/210 (second sheet) (July 1992)

# INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 00/16644

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| P,X | EMBL ACCESSION NUMBER Q9Y2Z6;<br>SEQUENCE CHARACTERISATION CGI-07 PROTEIN.<br>Homo sapiens (Human).<br>DT 01-NOV-1999 (TrEMBLrel. 12, Created)<br>Lin W.-C.; "Comparative gene cloning:<br>Identification of novel human genes with<br>C. elegans proteome as template.";<br>XP002157664<br>the whole document<br>----- | 1 |

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Form PCT/ISA/210 (continuation of second sheet) (July 1992)

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/16644

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see further information sheet invention group1.

**Remark on Protest**

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:1,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:1,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:1,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:1;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:14; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

2. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:2,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:2,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:2,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:2;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:15; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

3. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:3,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:3,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:3,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:3;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:16; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

4. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:4,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:4,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:4,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:4;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:17; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

5. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:5,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:5,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:5,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:5;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:18; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

6. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:6,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:6,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:6,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:6;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:19; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

7. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:1,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:1,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:1,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:1;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:21; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

8. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:8,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:8,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:8,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:8;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:214; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

9. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:9,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:9,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:9,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:9;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:22; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

10. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:10,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:10,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:10,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:10;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:23; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

11. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:11,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:11,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:11,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:11;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:24; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

12. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:12,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:12,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:12,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:12;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:25; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

13. Claims: partially 1-27

An isolated polypeptide comprising an amino acid sequence

selected from the group consisting of:
a) an amino acid sequence consisting of SEQ ID NO:13,
b) a naturally occuring amino acid sequence having at least 90% sequence identity to SEQ ID NO:13,
c) a biologically active fragment of an amino acid sequence consisting in SEQ ID NO:13,
d) an immunogenic fragment of an amino acid sequence consisting in SEQ ID NO:13;an isolated polynucleotide encoding said polypeptide or consisting of SEQ ID NO:26; a cell transformed with such a recombinant polynucleotide; a transgenic organism comprising said recombinant polynucleotide; an isolated antibody which specifically bins to said polypeptide; an hybridization method for detecting a target said polynucleotide; a pharmaceutical composition comprising an effective amount of said polypeptide and a pharmaceutically acceptable excipient; methods for screening agonists, antagonists, binding compounds , of said polypeptide and pharmaceutical compositions comprising an effective amount thereof and a pharmaceutically acceptable excipient; method for treating a disease or condition associated with an altered expression of said functional polypeptide using said pharmaceutical compositions;

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US 00/16644

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| WO 9823744 A | 04-06-1998 | US 5962226 A | 05-10-1999 |
| | | AU 7410598 A | 22-06-1998 |